

Abstract

The growth of carbon nanotubes such as single-walled carbon nanotubes (SWNTs) is achieved using a catalyst and carbon feedstock gas, with the catalyst being
5 delivered using an approach for relatively clean delivery and placement thereof. In one example embodiment, nanoparticles are deposited from solution onto a substrate, and the substrate is subsequently heated to form catalyst material from the nanoparticles. A carbon nanotube is then grown from the catalyst material, using the catalyst material to catalyze a reaction that is used to grow the carbon nanotube. In one implementation,
10 hydroxylamine is used in the deposition of nanoparticles of a catalyst precursor material from aqueous iron-containing solutions onto an SiO₂ substrate. The nanoparticles are heated and used to form catalyst material on the SiO₂ substrate, which is used in the subsequent growth of carbon nanotubes via the introduction of carbon-containing gas to the nanoparticles.